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PROPOSED REVISIONS TO THE MEDIUM-TERM PLAN FOR THE PERIOD 1992-1997*

MAJOR PROGRAMME IV. INTERNATIONAL ECONOMIC COOPERATION FOR DEVELOPMENT

Programme 20. Energy

1. The preparation, format and content of the medium-term plan and its revisions are governed by the Regulations and Rules Governing Programme Planning, the Programme Aspects of the Budget, the Monitoring of Implementation and the Methods of Evaluation (ST/SGB/PPBME Rules/1(1987)).

2. Regulation 3.11 provides, inter alia, that the medium-term plan shall be revised as necessary every two years to incorporate required programme changes and that the proposed revisions shall be as detailed as required to incorporate the programme implications of the resolutions and decisions adopted by the intergovernmental organs or international conferences since the adoption of the plan.

3. The revisions proposed below modify the relevant parts of the narrative of programme 20, Energy, of the medium-term plan for the period 1992-1997, which was adopted by the General Assembly in its resolution 45/253 of 21 December 1990 and issued in document A/45/6/Rev.1. The revisions update the narrative on the basis of recent legislative mandates and also reflect the changes resulting from the decisions adopted by the United Nations Conference on Environment and Development and the current restructuring of the

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* After adoption by the General Assembly at its forty-seventh session, the complete revised medium-term plan will be issued in final printed form as Official Records of the General Assembly, Forty-seventh Session, Supplement No. 6 (A/47/6/Rev.1).

Secretariat. Owing to the calendar of meetings of the Committee on New and Renewable Sources of Energy and on Energy for Development, these revisions were not reviewed by the Committee.

4. Owing to the extensive scope of revisions to the programme all the paragraphs affected by the revisions are reproduced in their entirety. All changes are highlighted by placing deleted text in square brackets and by underlining added text.

5. The following text modifies paragraphs 20.1, 20.5, 20.7 to 20.13, 20.15 to 20.17, 20.19, 20.20, 20.22, 20.24 to 20.27, 20.29 to 20.36 and 20.38 to 20.49 of A/45/6/Rev.1.

A. Programme

1. General orientation

20.1 In order to attain the overall development and sectoral goals of the International Development Strategy for the Fourth United Nations Development Decade and the Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy, while promoting sustainable development in the area of energy, in accordance with the relevant provisions of Agenda 21 - particularly those contained in its chapter 9, Section B1 - the present programme will aim at providing assistance to policy makers and international organizations to enable them to evolve an integrated response to energy issues of global significance and to promote appropriate forms of international action.

20.5 Trends in energy exploration, development and consumption show a continuous predominance of fossil fuels - oil, natural gas and coal. Over the past two decades, there has been a growing awareness of the close relationship between energy and environmental issues that has opened an entirely new area for international concern. Agenda 21 of the United Nations Conference on Environment and Development points to the fact that much of the world's energy is produced and used in ways that could not be sustained if technology were to remain constant and if overall quantities were to increase substantially. The need to control atmospheric emissions of greenhouse and other gases and substances will increasingly need to be based on efficiency in energy production, transmission, distribution and consumption, and on growing reliance on environmentally sound energy systems, particularly new and renewable sources of energy. All energy sources will need to be used in ways that respect the atmosphere, human health and the environment as a whole. The international community should therefore continue to strive for economically efficient and environmentally sound energy development paths. Hence there is a need to intensify the monitoring and analysis of environmental aspects, policies and measures of development and use of energy, particularly with regard to issues transcending national boundaries. The aim is, inter alia, to promote policies and programmes, as appropriate, to increase the contribution of environmentally sound and cost-effective energy systems, particularly new and renewable ones, through less polluting and more efficient energy production, transmission, distribution and use.

20.7 There is a need to strengthen international cooperation, to improve coordination among all the organizations and agencies concerned and to promote concerted action with support of the international community according to national plans and priorities in the areas identified in the Nairobi Programme of Action and Agenda 21 of the United Nations Conference on Environment and Development. There is also a need to stimulate the mobilization of additional and adequate financial resources for their development and to provide for an exchange of information and manpower training in new and renewable resources of energy.

2. Overall strategy

20.8 The basic approach to the implementation of the programme will be to assist member countries in strengthening their capability to define and manage their energy-related problems and to do so on a self-sustained, [and] continuous and sustainable basis, taking into account the critical interlinkages between energy production and consumption and their environmental impacts, particularly as related to the protection of the atmosphere and to climate change. Towards that end, the Department of [International Economic and Social Affairs and the Department of Technical Cooperation for Development of the United Nations Secretariat] Economic and Social Development will implement the following overall strategy [, while maintaining close coordination].

20.9 The Department of [International Economic and Social Affairs, through its Energy Resources Branch under the Office for Development Research and Policy Analysis,] Economic and Social Development will undertake research and analysis of supply and demand and other trends in energy that affect the world economy, and will conduct studies concerning the relationship (a) between energy and economic performance, including, inter alia, energy conservation and utilization; [and] (b) between energy and balance of payments and investment requirements of the energy sector; and (c) between energy utilization and conservation and the protection of the environment, including through the development of new and renewable sources of energy. Much of the work of the programme will focus on the identification of trends and issues of international concern and on bringing those to the attention of policy makers in the energy field. [Environmental aspects of energy utilization and conservation, including development of new and renewable sources of energy, will also be considered.]

20.10 The Department [of Technical Cooperation for Development, through its Energy Resources Branch,] will also identify, promote and execute technical cooperation projects. The Department will implement a technical assistance programme covering the exploration and sustainable utilization of energy resources, upgrading and ensuring the efficient utilization of the existing energy infrastructure, developing human resources, reviewing the institutional framework of the energy sector, establishing national energy information systems, assessing and controlling the impact of energy activities on the environment and promoting measures and policies aimed at facilitating the transition towards more sustainable energy systems. In respect of the latter, full consideration will be given to countries heavily dependent on the production, export and consumption of fossil fuels to ensure that the transition does not adversely affect their development. All those activities

will be aimed at strengthening energy policies and programmes of the developing countries. It is expected that Governments recipients of technical assistance will assign due priority to the energy sector and provide adequate counterpart personnel to the technical assistance effort in order to secure an effective transfer of technology, particularly environmentally sound technology, and create a self-sustained capacity for project implementation.

20.11 Another line of action by the Department will consist of providing direct advisory services to the developing countries on matters of sustainable energy resource development, energy planning and energy-related technology transfer, with particular emphasis on energy efficiency and sustainability. International seminars, workshops and study tours will be organized to train personnel and to provide the opportunity to exchange experiences and information among experts from developed and developing countries. Technical studies will be carried out for the purpose of exploring new directions, new methods and new technologies relevant to the needs of the developing countries and to global environmental concerns, particularly those related to the protection of the atmosphere and climate change [while at the same time examining past experiences for valuable lessons learned]. Those studies will be disseminated through special technical publications and periodicals.

20.12 The energy programme will be closely coordinated with [the natural resource programme] programmes 17, Science and technology for sustainable development, and 19, Natural resources, and with the regional commissions in relevant activities included in major programme VI, Regional cooperation for economic and social development. Efforts of coordination and cooperation with UNDP, UNEP, FAO, the World Bank particularly with the Global Environmental Facility and other organizations and agencies of the United Nations system will be enhanced.

3. Subprogramme structure and priorities

20.13 The programme on energy will consist of the following subprogrammes:

Subprogramme 1. Monitoring and analysis of global energy trends and their impact on development and environment

Subprogramme 2. Promotion of sustainable energy exploration and development in developing countries

Subprogramme 3. Furthering the development and use of new and renewable sources of energy

Subprogramme 4. Energy resource assessment and exploration

Subprogramme 5. Energy planning and management

Subprogramme 6. Development and transfer of technology, particularly environmentally sound technology, for exploiting critical energy resources.

[Subprogrammes 1 to 3 will be implemented by the Department of International Economic and Social Affairs, subprogrammes 4 to 6 by the Department of Technical Cooperation for Development.]

B. Subprogrammes

SUBPROGRAMME 1. MONITORING AND ANALYSIS OF GLOBAL ENERGY TRENDS AND PROSPECTS AND THEIR IMPACT ON DEVELOPMENT AND ENVIRONMENT

(a) Objectives

20.15 The legislative authority for the subprogramme derives from General Assembly resolutions 32/174, 32/197 and 39/196, [and] Economic and Social Council resolution 1761 (B) (LIV), and from the Rio Declaration and Agenda 21 of the United Nations Conference on Environment and Development.

20.16 Discussions on global energy policies and national energy planning need a coherent common basis of analysis of the current and likely future situations relating to energy supply and demand and their environmental implications. Future supply and demand are, however, subject to the influence of many changing factors, and those factors themselves must be the object of research and analysis in order to derive realistic estimates of future energy supply and demand. For example, energy demand is influenced by, inter alia, the rate of economic growth, conservation efforts and energy use practices, technological innovation and investment designed to speed energy efficiency, possibilities for inter-fuel substitution and a broad spectrum of governmental policies. Similarly, supplies of energy are influenced by investments, changes in energy institutional structures, laws and regulations affecting exploration and development of energy resources and the state of energy technologies.

20.17 [The interrelationship between energy demand and supply, on the one hand, and environmental degradation, on the other, needs to be better understood.] Scientific and analytical work undertaken in the context of the preparations for the United Nations Conference on Environment and Development provided substantial new knowledge about the interrelationship between energy demand and supply, on the one hand, and environmental degradation, on the other. Yet the intensity and the dynamics of this interrelationship still need to be better understood. Environmental consequences will act both as a constraint on the evolution of the global energy sector over the medium-term plan period, and as an incentive in the development and application of environmentally safer technologies. Energy developments, in turn, will be a major factor in determining the trend of environmental well-being. The environmental implications of different forms and levels of energy use and related policy options will also constitute important inputs for environment-related work in other programmes of the medium-term plan.

20.19 The objectives are (a) to assure a flow of universally accessible competent analysis of the current and projected balance between global energy supply and demand, which can be used as an objective basis in addressing energy issues at both the national and international levels; [and] (b) to strengthen the ability of national and international policy makers concerned to anticipate global energy trends, thereby reducing some of the uncertainty involved in formulating energy plans, programmes and policies; and (c) to increase further the knowledge and the understanding of the environmental impact of various policy options and policies.

(b) Course of action of the Secretariat

20.20 A series of mutually reinforcing lines of analysis on energy supply will be pursued. Examination of prospects of renewable energy sources will complement a set of studies addressed at delineating supply-time profiles for exhaustible energy sources. Those studies will analyse the long-term supply elasticities of such fuels with respect to technological, economic, environmental and policy factors. They will [also] pinpoint potential bottlenecks in the development of energy resources, such as problems in technology transfer and insufficiency of capital flows to developing countries, and will identify remedial measures. They will also focus on developing countries' potentials to develop environmentally sound sources of energy and to promote their efficient and sustainable utilization.

20.22 Research and analysis on those longer-term phenomena will be supplemented by continuous monitoring of the prevailing energy supply-demand balance, as well as of the evolution of energy supply mixes as related to the objective of achieving a transition towards more sustainable energy systems. The decision-making ability of policy-makers and other concerned bodies will be strengthened by the increased availability of timely information on current developments and emerging problems, including through information exchange activities such as agreed in the context of the United Nations Conference on Environment and Development. Considerable use of energy models of varying degrees of generality is foreseen. Use of those models and other types of analytical work will be facilitated by the completion of the energy data bank mentioned above.

SUBPROGRAMME 2. PROMOTION OF SUSTAINABLE ENERGY EXPLORATION DEVELOPMENT IN DEVELOPING COUNTRIES

(a) Objectives

20.24 The legislative authority for the subprogramme derives from General Assembly resolutions 40/208 and 43/193, and the Rio Declaration and Agenda 21 adopted by the United Nations Conference on Environment and Development.

20.25 There are gaps between investment requirements and financing availability in developing countries, which can be reduced by appropriate action aimed towards achieving greater understanding and harmonization of interests between such countries, financial institutions and foreign investors. Chapter 9, section B1, of Agenda 21 provides a new opportunity for promoting such an understanding with the aim of making additional resources available for the exploration and the sustainable development of energy resources in the developing countries.

20.26 The objective of the subprogramme will be to foster the acceleration of energy exploration and development, particularly in energy deficient developing countries, and to define and subsequently elaborate a programme of action aimed at improving the effectiveness of national policies and bilateral and multilateral programmes in the exploration and development of energy resources. Particular emphasis will be placed on improving energy efficiency in developing countries, in line with their development needs and with the aim of achieving more sustainable energy systems.

(b) Course of action of the Secretariat

20.27 Secretariat action will focus on identifying gaps between investment requirements and financing availability and bringing these to the attention of the relevant intergovernmental bodies. Research and analytical studies on the exploration and sustainable development of energy resources in developing countries, particularly those identified as energy deficient, will continue to be emphasized during the period 1992-1997 of the medium-term plan. This work will include monitoring of those factors influencing overall energy resource investment, such as changes in the institutional structures, energy prices, developments in exploratory techniques and changes in the provisions of longer-term agreements between host countries and foreign investors. Reports will pinpoint changes in trends and in such factors and the implications of those changes for resource development prospects. Investment requirements of developing countries in the energy sector will be kept under review and financing methods available to those countries will also be the subject of investigation. Particular attention will be devoted to exploring and mobilizing new sources of finance for sustainable energy development projects and programmes, including the sources envisaged in Agenda 21, such as the Global Environmental Facility.

SUBPROGRAMME 3. FURTHERING THE DEVELOPMENT AND USE OF NEW AND RENEWABLE SOURCES OF ENERGY

(a) Objectives

20.29 The legislative authority for the subprogramme derives from General Assembly resolutions 36/193, 37/250, 38/169, 41/170, [and] 43/192 and 46/235, and the Rio Declaration and Agenda 21 adopted by the United Nations Conference on Environment and Development.

20.30 Despite some significant progress, the pace of implementation of the Nairobi Programme of Action for the Development and Utilization of New and Renewable Sources of Energy has, over the past decade, been somewhat slow. Moreover, the reduction in the price of conventional energy, notably that of oil, has led to a waning of interest in the question of development and utilization of new and renewable sources of energy. Nevertheless, there is a need for continued effort in that field and an appreciation of the fact that development of new and renewable sources of energy, although long-term, requires continued attention. That is particularly true for developing countries, where new and renewable sources of energy will be required to meet energy needs in rural areas and will also be required as their economies grow stronger with increased industrialization. The outcome of the United Nations Conference on Environment and Development and the ascertained need to integrate environmental concerns into all aspects of development provides a new impetus to national and international efforts aimed at promoting the reliance on new and renewable sources of energy. The relevance of this subprogramme is therefore enhanced by the adoption of Agenda 21 by the United Nations Conference on Environment and Development, but so are the expectations it has to respond to, and the challenges it faces.

20.31 Associated with the need to rekindle interest in new and renewable sources of energy is the need to ensure additional adequate resources for their development and use, particularly in view of environmental

considerations and the depletable nature of fossil fuels. [There is obviously a need to move towards a better energy mix that will reduce the pressure on traditional energy resources.] This subprogramme is therefore particularly suitable to benefit from the additional financial resources that are expected to be mobilized in the context of the implementation of Agenda 21, including those to be allocated through the Global Environmental Facility.

20.32 The objective of the subprogramme will be to facilitate the implementation of the Nairobi Programme of Action and of chapter 9, section B1, of Agenda 21, by the creation of an expanded database on activities in the field of new and renewable sources of energy and by a strengthened coordination of effort within the United Nations system in the field of new and renewable sources of energy, as indicated by an increase in instances of cooperation in planning and implementation.

(b) Course of action of the Secretariat

20.33 The primary activity under the subprogramme will be the provision of substantive support to the Committee on [the Development and Utilization of New and Renewable Sources of Energy] New and Renewable Sources of Energy and on Energy for Development, which is entrusted with the monitoring of the implementation of the Nairobi Programme of Action; and the preparation of the substantive documentation for the Committee. The monitoring, collecting and reporting will be intensified on multilateral, bilateral and other programmes in that field and on the situation with regard to financial resources for the integrated implementation of the Nairobi Programme of Action and of chapter 9, section B1, of Agenda 21 of the United Nations Conference on Environment and Development. The programme will fully take into account the need to ensure the necessary interaction and complementarity between the Committee on New and Renewable Sources of Energy and Energy for Development, on the one hand, and the high-level Commission on Sustainable Development, to be established in accordance with chapter 38 of Agenda 21, on the other.

SUBPROGRAMME 4. ENERGY RESOURCE ASSESSMENT AND EXPLORATION

(a) Objectives

20.34 The legislative authority for the subprogramme derives from General Assembly resolutions 34/201, 36/193, 43/192, 43/193, [and] 44/227, and 46/235, [and] Economic and Social Council resolutions 1989/6 and 1989/10, and the Rio Declaration and Agenda 21 adopted by the United Nations Conference on Environment and Development.

20.35 Developing countries often lack the capacity to evaluate their indigenous energy resource potential and to execute exploration programmes. In addition, the utilization of energy resources is hampered by inefficiency. The central objective is to increase the capacity to identify and evaluate the energy resource potential and contribute to a more efficient utilization of resources, taking into account environmental concerns, in line with the relevant provisions of Agenda 21.

(b) Course of action of the Secretariat

20.36 The Secretariat will carry out efforts to expand the energy supply base of the developing countries through continued support for the exploration and sustainable exploitation of indigenous energy resources, which will focus specifically on assistance in the exploration for fossil fuels, hydropower, natural gas, coal and geothermal energy. With regard to fossil fuels, these efforts will include enhanced parallel activities in support of the use of environmentally cleaner technologies.

20.38 The programme will continue to support technical cooperation projects and provide advisory services to Governments to assist in strengthening their national capacities for undertaking expanded exploration, survey and evaluation activities to broaden the conventional new and renewable energy resource base in developing countries. [Intensified activities will be undertaken to promote the flow of financial resources for further in-depth exploration programmes and development.] Particular attention will be devoted to technical assistance projects designed, inter alia, to facilitate the transition towards more sustainable energy systems.

20.39 Studies on new technological developments, techniques and strategies for identifying, locating and evaluating conventional, new and renewable sources of energy will be prepared and disseminated to Governments. They will include, inter alia, studies on the environmental impact of various energy mixes, with a view to optimizing both environmental and developmental results. Interregional seminars, workshops and study tours for training national personnel and exchanging experiences in energy resource exploration techniques, as well as for evaluation of selected new and renewable sources of energy will be convened through the period of the medium-term plan. They will include a greater emphasis on the organization of training seminars for energy experts from developing countries on the issues associated with financing energy exploration and sustainable development. The seminars and workshops, whenever possible, will seek to ensure fruitful contacts and interaction between officials and experts from developing countries and representatives of international and regional financial organizations and funds, and bilateral donors. In the elaboration of the themes for such seminars, due account will be taken of the need to ensure an integrated approach to developmental and environmental concerns.

SUBPROGRAMME 5. ENERGY PLANNING AND MANAGEMENT

(a) Objectives

20.40 The legislative authority for the subprogramme derives from General Assembly resolutions 36/193, 43/192, 43/193 [and] 44/227, and 46/235, [and] Economic and Social Council resolutions 1989/6 and 1989/10, and the Rio Declaration and Agenda 21 adopted by the United Nations Conference on Environment and Development.

20.41 The objective of the subprogramme is to increase the capacity of developing countries to manage and plan effectively the sustainable development of their energy sectors in the context of national development planning processes. In that context, the subprogramme will seek to develop further effective national capacities that will enhance the ability of the

countries concerned to formulate integrated and sustainable energy policies and plans and will allocate scarce investment resources to energy development in a way that will most effectively meet the needs of the various sectors of their economies. That will require a capability to identify and evaluate viable scenarios of energy supply and demand patterns, to determine energy consumption and production objectives, to formulate activities and to allocate resources in order to attain such objectives. It will contribute also to the assessment of the institutional changes needed and training and information requirements. The subprogramme will also [create an] enhance the awareness of the environmental impact of energy activities.

(b) Course of action of the Secretariat

20.42 Training of personnel from the developing countries in planning and management of the energy sector is a continuous and key ingredient to reaching successfully the objectives indicated above and securing a permanent capability in the country required for judicious policy-making and effective and sustainable development of energy resources.

20.43 Strengthening the policy-making and operational institutions of the energy sector will be supported and encouraged, as well as the interaction between energy and environmental authorities. Legislation, regulations and contractual terms need to be reviewed in order to maintain the national interest of the countries, both with regard to development and environment, and, at the same time, attract the needed capital investment.

20.44 Assistance will be provided to developing countries in establishing national information systems for energy policy decision-making, energy planning and monitoring of activities related to the sustainable development and use of all energy resources available in the country. That will be done especially through microcomputer-based energy databases and models for formulating policy and energy planning and for integrating energy planning activities and programmes more closely with the overall economic and sectoral development plans. The technology of computer-aided decision-making and monitoring as applied to the exploration and sustainable exploitation of energy resources will also be pursued. Assistance will also be provided to developing countries in the field of education and awareness-raising concerning energy efficiency and environmentally sound energy systems.

20.45 Technical cooperation activities and the provision of advisory services to developing countries for strengthening institutions concerned with energy planning, training of national personnel and the methodological and informational infrastructure for energy planning will increase. The flow of information among countries through meetings and publications on technologies, particularly on environmentally sound energy technologies, and factual experiences of both the developing and developed countries will be facilitated.

SUBPROGRAMME 6. DEVELOPMENT AND TRANSFER OF TECHNOLOGY, PARTICULARLY ENVIRONMENTALLY SOUND TECHNOLOGY, FOR EXPLOITING CRITICAL ENERGY RESOURCES

(a) Objectives

20.46 The legislative authority for the subprogramme derives from General Assembly resolutions 36/193, 43/192, 43/193, [and] 44/227 and 46/235, [and] Economic and Social Council resolutions 1989/6 and 1989/10, and the Rio Declaration and Agenda 21 adopted by the United Nations Conference on Environment and Development.

20.47 There is a need to increase the availability and operational use of the technologies required by developing countries to develop, harness and exploit their indigenous energy resources in order to meet their energy requirements, while ensuring an adequate protection of their environmental values. The subprogramme will promote the use of enhanced recovery techniques, the upgrading of technologies currently in use and the rehabilitation of the energy production and distribution technologies. [Environmental implications will be fully taken into account.]

(b) Course of action of the Secretariat

20.48 During the medium-term plan period, efforts will be increased to transfer directly through technical cooperation mature and environmentally sound technologies that are readily available for exploiting identified conventional and new and renewable energy resources, as well as to provide information for use by Governments on the range of technological options that are available to exploit selected energy sources. The use of enhanced oil recovery techniques will be promoted. In the electricity sector, the problem of ageing electricity generating systems will be addressed with plant upgrading and rehabilitation projects. The subprogramme will support government efforts to improve and develop technologies for a more efficient use of firewood and the utilization of solar, wind and small hydropower resources to meet or supplement the demand in rural areas and isolated energy consumption centres. In general, support will be provided through technical cooperation projects to develop the national capacity to analyse potentially viable and environmentally sound [energy] technologies and facilitate their transfer to the developing countries.

20.49 National energy information systems will include information on environmentally sound technologies available for harnessing various energy sources: to gain access to and have a capacity to evaluate energy technologies for exploitation of identified conventional and new and renewable energy potential; and to strengthen the national technical manpower of developing countries and their institutional capabilities to develop, adapt and apply the technologies required, including the conduct of national research and development programmes. The flow of technical information to the developing countries from a worldwide network of information sources will be supported to serve as a clearing-house for the exchange of information and experiences among developing countries.